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ABSTRACT

The theme meeting on new communication and information technologies and their application to public and citizen uses and needs, which was coordinated by the National Citizens Committee for Broadcasting (NCCB), was designed as an educational experience and a working session. The 25 participants representing government, private industry, university, and citizens' groups explored the present state of communication and information technologies (hardware and software) and their current applications, as well as new applications of presently available technology for use by individuals and small community-based organizations. Following an overview presentation and discussion, participants divided into two groups to assess the information needs of individuals of the small community-based organization. Finally, participants separated into three workshops to develop community-based demonstration projects designed to educate the community on the most useful technologies for use at this level; to stimulate utilization of the technologies; to provide direct information services to the citizen/small organization; and to elicit information on utilization patterns and psychological responses of use patterns. This report summarizes the overview session, the results of both the needs assessment groups and the workshops, and the eight recommendations developed by participants. (SW)

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NEW COMMUNICATION AND INFORMATION TECHNOLOGIES

A Theme Conference Summary

ED179239

White House Conference on Library and Information Services

Pre-Conference Meetings on Special Themes

June 20-21, 1979

New Communication and Information Technologies and Their Application to Individual and Community Use

A Theme Conference Summary

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Washington, D.C.

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INTRODUCTION

Recent revolutionary developments in electronics have made telecommunications an integral part of the information society. Telecommunications traditionally has been the sole dominion of AT&T, but within only the past 5 years IBM, ITT, RCA, Xerox, and dozens of smaller companies have become actively involved in nonbroadcast communications, high-speed computer-to-computer data communication, satellites, data processing, facsimile, electronic mail, electronic funds transfer, interactive home cable television, and video- and teletext systems. The implications of this startling revolution for the individual and small, community-based organizations are profound.

To date, however, individuals and small organizations know very little about the technology, are uninformed about present and potential uses, often are unable to obtain access to many operating information services, and are being excluded from decisionmaking (in Congress, government agencies, and business) on many of the complex issues of the electronic information society.

The National Citizens Committee for Broadcasting (NCCB) has been deeply concerned about the lack of information and understanding of such a vital subject. In 1979, NCCB proposed to coordinate a meeting on new communication and information technologies and their application to public and citizen uses and needs. In its concept paper, NCCB stated:

> Communication and information technologies are growing at explosive rates . . . The technology and the information flowing from the technology, however, is generally available only to the largest institutions such as corporations, government agencies and other public bodies.
>
> Individuals, community-based groups and local organizations have little or no understanding of either the technology itself or the potential for meaningful access to the information it can produce.
>
> Therefore, an urgent need exists for a seminar/workshop that focuses on specific relationships between these growing new technologies and information sources and the individual and local or small public institutions.
>
> The National Citizens Committee for Broadcasting, therefore, proposes to coordinate a meeting . . . to address the question of the application of these technologies and the information that is made available through them to the public and citizen use, including proposed demonstration projects and methods of educating the public on the technologies and their availability.

The White House Conference on Library and Information Services agreed to co-sponsor a meeting with NCCB and stated its interest in the electronic information society.

> The White House Conference . . . is particularly interested in redefining the role of libraries and information centers in an information laden environment. We feel quite strongly that increasingly the position an individual occupies in society depends on his or her ability to get and use information.
>
> One of the elements which has profoundly affected the transmission of information is the fast developing communication and information technologies. Indeed, satellite transmission, computers, data banks, fiber optics, cable technology and more are revolutionizing our world. We agree that this technology is under-utilized by a large portion of our population.
>
> We who are involved in the White House Conference are eager to have information about these technologies and the issues flowing from them brought to the attention of our delegates.

The meeting was held at the Carnegie Institution in Washington, D.C. on June 20-21, 1979. The 25 participants involved in new technologies represented government, private industry, university, and citizens' groups. Representatives of several information service companies were also invited to display and explain their services.

MEETING OBJECTIVES AND DISCUSSION

The meeting was designed as an educational experience and a working session. The specific objectives were to:

-- explore the present state of communication and information technologies (hardware and software) and their current applications,

-- explore new applications of presently available technology for use by individuals and small, community-based organizations,

-- undertake an assessment of the information needs of individuals and community-based organizations,

-- develop specific demonstration projects applying the new technologies to needs of small users, and

-- develop specific plans for educational programs, to educate consumer groups and smaller public institutions on available technology and its potential benefits to them and the public.

Overview of Present Technology

The presentation on the technology, the services available from the technology, and how it works was given by Richard Solomon, a Research Fellow in Information Resources Policy at Harvard University and a Research Associate at MIT's Telecommunications Policy Program, Center for Policy Alternatives. Solomon presented a brief history of information technology, emphasizing that the basic technology, such as telephone and computers, is not new; the major new developments are the staggering cost reductions and software capability of the existing technology.

Solomon also explained how the equipment now associated with computer and information technology works. The cathode ray tube, the telephone, printers, keyboards, and associated equipment were discussed in detail. Solomon noted that not all components of a system are necessary for one to have access to information. Thus, one could have access to a computer display terminal without a printer, or to a printer without a display terminal, and in either case have access to the same information. Accordingly, a home computer system adequate for linking with computerized information banks and other information services can be leased by the month and purchased for only a few thousand dollars. Thus, the relatively low cost of the hardware increases its availability to individuals and small organizations.

After reviewing the basic technology and hardware, Solomon led a discussion of the categories of information technology that are presently applicable for individuals and small, community-based organizations. The following is a description of the distinct technology types identified by the participants.

Teletext. An interactive text system. A broadcaster transmits a constant stream of text and pictures from a stored database. The viewer can pull off the air desired information through the use of a decoder. This is different from videotext, where the viewer can call up information from a remote computer.

Videotext. An interactive text system whereby a viewer can call up information from a computer database onto his or her television screen. The terminal is an adapted television set with a telephone connected to the computer. Viewers interact through a remote-control switchbox that looks like a typewriter or a calculator keyboard.

Computer Conferencing. Typewriter-like terminals that can transmit information over the existing telephone network. They are connected to remote computers that permit interactive typewritten conversations, message transmission, and storage.

Value-Added Networks. Common carriers that offer computer-related services as part of the transmission of data, such as code conversion. They facilitate communication between computers and various types of terminals.

Two-way Cable Television. Cable television that offers the audience the opportunity to interact with the cablecaster.

Enhanced Database Brokers. Information networks that give access to a computer and are operated with a set of programs that enable users to withdraw specific parts of the information according to their needs. Enhancement involves the offering of interactive services such as message sending, merchandise ordering, and electronic mail services.

STV (over the air). Subscription television service. A method of encoding television signals so that only users who have paid a fee can receive the picture.

Regular Database Brokers. Information networks that give access to a computer and that are operated with a set of programs that enable users to withdraw specific parts of the information according to their needs.

The range of services provided for individuals and small organization users by these technologies includes mail, database, video, programming aid (home computers), merchandise ordering, airline reservations, timeshare computation, newsletter, conferencing, notebook, personal calendar, code translation (terminal), education (computer-assisted instruction), entertainment, and narrowcasting.

Individual and Community Needs Assessment

Following the overview presentation, the participants separated into two groups. One group focused on assessing the information needs of individuals. The other focused on assessing the information needs of the small, community-based organization.

The individual information-needs assessment group first identified how the individual obtains information: by direct access; through brokers, such as libraries or research services; and through editorial systems (or "gatekeepers"), which package information to suit individual consumer needs.

A series of specific information needs as they relate to the individual were identified:

-- registering opinions and desires to institutions and services,

-- schedule information (plane, train, television, movie),

-- pricing and ordering information,

-- referral to services,

-- comparative pricing,

-- current and timely news,

-- ready reference,

-- localizing and personalizing data from a larger base (real estate offerings in specific neighborhoods),

-- storage and retrieval (game programs, budget and account information, record keeping),

-- leisure and recreation,

-- individualized instruction,

-- interaction with government (accountability),

-- product warnings, hazards, and recalls,

-- environmental information (weather, road conditions, pollution alerts), and

-- special services (mortgage financing, energy audits).

The group also addressed the problem of making individuals more informed about the technology itself. Unless individuals are able to use the technology, or unless the hardware and software are designed for individual or small organizational use, information needs may never be fulfilled. Suggested methods of increasing individual user awareness are:

-- educate the consumer about available information banks and information providers,

-- build information literacy and awareness of information economy,

-- promote information providers and systems with consumer-oriented language and design (how to digest and edit electronic pages for consumer audience; classification systems for ready access to information),

-- standardize component hardware and system language, and

-- build systems and services incremental to basic components and established uses (consumer information as an adjunct to entertainment and leisure).

The group assessing the information needs of small organizations arrived at five general categories of information objectives for community-based organizations, or for the community itself. These included the need for access to and from information systems, the need for understandable systems, the need for information systems that support face-to-face communications, the need to foster local control and access to communication sources, and the need for increased national coordination of the application of Federal information sources to the local level.

WORKSHOP PROCEEDINGS

The participants separated into three different workshops and were instructed to develop community-based demonstration projects designed: to educate the community on the most useful technologies for citizen/small organization use; to stimulate utilization of the technologies; to provide direct information services to the citizen/small organization; and to elicit information on utilization patterns and psychological responses of use patterns. Proposals were to be related to the local library or to the library systems whenever possible. The participants also were instructed to attempt to include a plan that would indicate the type of services to be offered by the proposed experimental projects.

Individual Application Demonstration Projects

Workshop I proposed a three-part demonstration project aimed primarily at creating individual new-technology literacy. The first part would involve the placement of terminals in locations, such as libraries, where individuals would have both access and assistance in using them; the second part involved the development of information providers, programs, and data banks oriented to the individual consumer; the third part involved education and consumer awareness of hardware components to tie the individual user into skills for access to the developing information economy.

Community-Based Information Technology Demonstration Projects

Workshop II proposed three experimental projects.

The first project would provide to public libraries, on a demonstration basis, the entire range of online information systems of the Library of Congress, including bibliographic databases and information on the status of pending legislation. During the group discussion of this project it was noted that some work was already going on in this area. It was also pointed out that there may be serious political impediments to its implementation.

The second project would develop a local legislative reference service based on the model provided by the Library of Congress LEGIS System. The purpose of the service is to provide readily available means of ascertaining information concerning legislative attempts to solve local problems. The project would include access by local groups to information about efforts of other local groups, as well as information about solutions attempted to solve similar problems in other jurisdictions. Four regional pilot demonstrations were suggested at an estimated cost of $250,000 per project for the first year of installation and operation.

The third project would develop a community information profile, a database that could provide community groups, local governments and others with demographics about a community, governmental structure and operation information; substantive service availability from the government; and voluntary organizations. It was recommended that one pilot project be established in an urban neighborhood library; a second project in a small city library and a city office; and a third project in a rural area in conjunction with the post office and the Agricultural Extension Service.

Educational Projects and Strategies for the Future

Workshop III developed four project recommendations, including a plan for future activities.

The first recommendation was for an education project to be targeted at primary and secondary school individuals. These would be in-school demonstration projects, with the goal of establishing computer literacy among the very young by use of hands-on experiments with information technologies.

The second was to design a packaged media project for leaders in government, small business, and public organizations. The project would focus on the utility of the application of new technology, and it would be used to raise the level of public consciousness about the applicability of the new technologies to the information needs of individuals and small organizations.

This workshop also recommended the establishment of an advocacy project to explore and to advocate public positions on the true implications for society of computer literacy. It would represent the interests of the individual and small users of information technologies on issues such as barriers to entry and anticompetitive practices.

The fourth recommendation proposed a strategy to implement all of the projects proposed by the participants. This included: establishing a working group of five to seven nongovernment persons from the meeting to coordinate the followup work; converting this report into various funding proposals; finding an interested organization to host the followup effort; and obtaining funds to develop a systematic program for seeking government and industry support to implement the recommended proposals.

SUMMARY OF RECOMMENDATIONS

The meeting participants worked together closely and, on the basis of their analyses and deliberations, developed the following eight specific recommendations:

-- Create demonstration project(s) to develop individual technology literacy. The project concept involves the placement of computer terminals in libraries (and perhaps other community centers) where individuals have ready access and can obtain assistance in the varied uses.

-- Provide a few public libraries with all online data bank information services of the Library of Congress.

-- Develop a local, computer-assisted legislative reference service concerning legislative attempts to solve local problems.

-- Develop a community information database with demographic profiles.

-- Create a demonstration project for primary and secondary school children to provide them with hands-on computer experience and literacy.

-- Establish a new information technology education program for government officials, small businesses, nonprofit organizations, and leaders of community-based groups.

-- Create an advocacy project to develop and to advocate public interest in major policy issues involved in the application of the new information technology.

-- Create a group to actively pursue implementation of the above recommendations and to explore other similar projects and needs.

At the conclusion of the meeting, a group of participants volunteered to organize followup activities to implement these recommendations by designing a program to obtain funding. The members represent information technology services, universities, the White House Conference, and NCCB.